STIC Search Report
EIC 1700

STIC Database Tracking Number: 171996

TO: Helen Pezzuto
Location: REM 10A29
Art Unit : 1713
November 23, 2005

Case Serial Number: 10/683559

From: Kathleen Fuller
Location: EIC 1700
REMSEN 4B28
Phone: 571/272-2505
Kathleen.Fuller@uspto.gov

Search Notes

STIC Search Results Feedback Form

USPTO

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

** PLEASE GIVE REQUEST TO Ms. K. FULLER. THANKS!

Access DB# 171996

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: HELEN PETTO Examiner #: 70058 Date: 11/17/05
Art Unit: 1713 Phone Number ~~30~~2-1101 Serial Number: 10/682,559
Mail Box and Bldg/Room Location: REM-10A29 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

SCIENTIFIC REFERENCE BR
Sci & Tech Inf - Cnt
NOV 18 REC'D
Pat. & T.M. Office

Title of Invention: SEE ATTACHED

Inventors (please provide full names):

Earliest Priority Filing Date: 10/11/02

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

A crosslinked/cured polycyclooctene (PCO) formed from cis-cyclooctene containing high trans double bond content (ring opening), cured by peroxide and heating (thermal). Polymer search results can be coupled with utility (i.e. SMP) and properties in cls 5-9 (i.e. tunable transition temps, crystallinity). Many Thanks!

KEY WORDS
shape memory polymers (SMP), semi-crystalline crosslink, shape recovery.

cls. 1-13, 15, 22-24 under consideration.

****

STAFF USE ONLY

Searcher: K. Fuller	**Type of Search**	**Vendors and cost where applicable**
Searcher Phone #:	NA Sequence (#)	STN ✓
Searcher Location:	AA Sequence (#)	Dialog
Date Searcher Picked Up: 11/23/05	Structure (#) 2	Questel/Orbit
Date Completed: 11/23/05	Bibliographic	Dr.Link
Searcher Prep & Review Time: 30	Litigation	Lexis/Nexis
Clerical Prep Time:	Fulltext	Sequence Systems
Online Time: 15	Patent Family	WWW/Internet
	Other	Other (specify)

PTO-1590 (8-01)

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=> FILE REG
FILE 'REGISTRY' ENTERED AT 12:03:20 ON 23 NOV 2005
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provided by InfoChem.

STRUCTURE FILE UPDATES:   22 NOV 2005  HIGHEST RN 868656-94-4
DICTIONARY FILE UPDATES:  22 NOV 2005  HIGHEST RN 868656-94-4

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

*************************************************************
*                                                           *
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005.  A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*                                                           *
*************************************************************

Structure search iteration limits have been increased.  See HELP SLIMITS
for details.

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predicted properties as well as tags indicating availability of
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=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 12:03:24 ON 23 NOV 2005
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FILE COVERS 1907 - 23 Nov 2005  VOL 143 ISS 22
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This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> D QUE
L2          5 SEA FILE=REGISTRY ABB=ON (246047-72-3/BI OR 24937-78-8/BI OR
              28603-38-5/BI OR 80-43-3/BI OR 9003-55-8/BI)
L3          1 SEA FILE=REGISTRY ABB=ON CYCLOOCTENE/CN
L4          1 SEA FILE=REGISTRY ABB=ON  L2 AND CYCLOOCTENE
L5       2689 SEA FILE=HCAPLUS ABB=ON  L3
L6         18 SEA FILE=HCAPLUS ABB=ON  L4
L8       2116 SEA FILE=HCAPLUS ABB=ON  L5 AND PREP/RL
L9       2011 SEA FILE=HCAPLUS ABB=ON  L5(L)RACT/RL
L10      1703 SEA FILE=HCAPLUS ABB=ON  L8 AND L9
L12         5 SEA FILE=HCAPLUS ABB=ON  L10 AND POLYCYCLOOCTENE
L13        16 SEA FILE=HCAPLUS ABB=ON  L6(L)PREP/RL
L15         3 SEA FILE=HCAPLUS ABB=ON  L13 AND ?PEROX?
L16        21 SEA FILE=HCAPLUS ABB=ON  L12 OR L13 OR L15
```

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=> D L16 1-21 BIB ABS IND HITSTR
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L16 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN

applicants

AN 2004:333782 HCAPLUS
DN 140:340119
TI Crosslinked polycyclooctene having excellent shape recovery properties
IN Mather, Patrick T.; Liu, Changdeng; Chun, Seung B.; Coughlin, E. Bryan
PA University of Connecticut, USA; University of Massachusetts
SO PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 7

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004033553	A1	20040422	WO 2003-US32138	20031010
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2501551	AA	20040422	CA 2003-2501551	20031010
	US 2004122184	A1	20040624	US 2003-683559	20031010
	EP 1560881	A1	20050810	EP 2003-774759	20031010
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI	US 2002-418023P	P	20021011		
	US 2002-419506P	P	20021018		
	US 2003-488323P	P	20030718		
	WO 2003-US32138	W	20031010		

AB Chemical crosslinked polycyclooctene having excellent shape recovery properties and a method for its synthesis via ring-opening metathesis polymerization of cyclooctene using the dihydroimidazolylidene-modified Grubbs catalyst are disclosed. The polycyclooctene products, following curing with dicumyl **peroxide** can be shaped, the shape memorized, a new shape imparted with the original shape being recoverable by suitable temperature

adjustment. The dependence of shape memory characteristics on degree of crosslinking was established. In addition to polycyclooctene, blends thereof with other materials such as SBR, EVA, polyurethane rubbers, and inorg. fillers can be utilized to provide chemical crosslinked products having excellent and tailored shape memory properties.

IC ICM C08L065-00
ICS C08G061-08

CC 37-3 (Plastics Manufacture and Processing)

ST ring opening polymn modified Grubbs catalyst polycyclooctene shape memory; metathesis polymn shape memory molding polycyclooctene chem crosslinking

IT Shape memory effect
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT Styrene-butadiene rubber, uses
Urethane rubber, uses
RL: POF (Polymer in formulation); USES (Uses)
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT Polymer blends
RL: TEM (Technical or engineered material use); USES (Uses)
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT Polymerization catalysts
(metathetic; manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT 80-43-3, Dicumyl peroxide
RL: CAT (Catalyst use); USES (Uses)
(crosslinking catalyst; manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT 246047-72-3, Grubbs' Ru-dihydroimidazolylidene catalyst
RL: CAT (Catalyst use); USES (Uses)
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT **28603-38-5P**, cis-Cyclooctene polymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); **PREP (Preparation)**; USES (Uses)
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT 24937-78-8, Ethylene-vinyl acetate copolymer
RL: POF (Polymer in formulation); USES (Uses)
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT 9003-55-8
RL: POF (Polymer in formulation); USES (Uses)
(styrene-butadiene rubber, manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

IT **28603-38-5P**, cis-Cyclooctene polymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); **PREP (Preparation)**; USES (Uses)
(manufacture of chemical crosslinked polycyclooctene having excellent shape recovery properties)

RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:120898 HCAPLUS
DN 140:164377
TI Synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers
IN Grubbs, Robert; Bielawski, Chris; Benitez, Diego
PA California Institute of Technology, USA
SO PCT Int. Appl., 43 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004013198	A2	20040212	WO 2003-US24222	20030801
	WO 2004013198	A3	20040617		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2004132934	A1	20040708	US 2003-632528	20030801
	US 6946533	B2	20050920		
	EP 1543043	A2	20050622	EP 2003-767093	20030801
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2005534777	T2	20051117	JP 2004-526342	20030801
PRAI	US 2002-400400P	P	20020801		
	WO 2003-US24222	W	20030801		

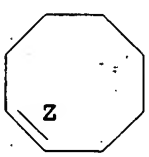
OS MARPAT 140:164377
AB A method for synthesizing cyclic polymers using transition metal alkylidene complexes as reaction catalysts is provided, wherein the complexes contain a cyclic group. Polymerization is carried out on the catalyst, using cyclic olefin monomers that undergo ring insertion polymerization, and no linear intermediates are generated. Following completion of polymerization, the cyclic polymer detaches from the complex via an intramol. chain transfer reaction and the catalytic complex is regenerated. The invention also provides novel transition metal alkylidene complexes useful as catalysts in the aforementioned process, as well as novel cyclic hydrocarbons. Cyclooctadiene was polymerized using a catalyst comprising deprotonated 1-mesityl-3-(7-octenyl)imidazolium bromide ligand and (PCy3)2Cl2Ru=CHPh.
IC ICM C08G
CC 35-6 (Chemistry of Synthetic High Polymers)
ST cyclic olefin polymn polyalkenamer; transition metal alkylidene complex

catalyst polymn
IT Transition metal complexes
RL: CAT (Catalyst use); USES (Uses)
(alkylidene; synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT Polymerization
(metathetic, ring-opening; synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT Polymerization catalysts
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT Polymer blends
RL: POF (Polymer in formulation); USES (Uses)
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT 656836-92-9P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(ligand; synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT 172222-30-9
RL: CAT (Catalyst use); USES (Uses)
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT **28603-38-5DP**, cis-Cyclooctene homopolymer, hydrogenated
28603-38-5P, cis-Cyclooctene homopolymer 28702-45-6DP, Polyoctenamer, cyclic
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT 373640-61-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT 4103-11-1 25364-44-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
IT **28603-38-5DP**, cis-Cyclooctene homopolymer, hydrogenated
28603-38-5P, cis-Cyclooctene homopolymer
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(synthesis of macrocyclic polymers by ring insertion polymerization of cyclic olefin monomers)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.

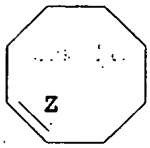


RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



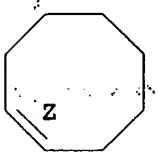
L16 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:882482 HCAPLUS
DN 140:60100
TI New microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP
AU Wewerka, Karin; Wewerka, Alf; Stelzer, Franz; Gallot, Bernard; Andruzzi, Luisa; Galli, Giancarlo
CS Institut fuer Chemische Technologie Organischer Stoffe, Technische Universitaet Graz, Graz, 8010, Austria
SO Macromolecular Rapid Communications (2003), 24(15), 906-910
CODEN: MRCOE3; ISSN: 1022-1336
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
AB New varied diblock copolymers were prepared by ring-opening metathesis polymerization of functionalized norbornene and cyclooctene in the presence of Schrock-type initiators, either [Mo(CHCMe2Ph)(N-2,6-iPr2Ph)(OCCH3(CF3)2)2] or [Mo(CHCMe2Ph)(N-2,6-iPr2Ph)(OC(CH3)3)2]. The block copolymers were microphase separated and presented the individual phases of each polymer block constituent, that were amorphous/amorphous, amorphous/semicryst., or semicryst./liquid-crystalline
CC 35-7 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 36, 75
ST norbornene cyclooctene deriv block prepn ring opening polymn catalyst; block fluorinated group microphase sepn morphol phase transition temp
IT Polyalkenamers
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(block; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT Polyalkenamers
RL: SPN (Synthetic preparation); PREP (Preparation)
(fluorine-containing; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT Liquid crystals, polymeric
Phase separation
Phase transition temperature
(microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT Polymer morphology
(phase; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)

IT Fluoropolymers, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(polyalkenamer-; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT Polymerization catalysts
(ring-opening; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 637041-55-5P 724458-06-4P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(diblock, liquid-crystalline; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 637041-56-6P 637041-57-7P 724452-98-6P 724453-03-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(diblock; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 637041-54-4P 638131-85-8P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(liquid-crystalline; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 28350-29-0P **28603-38-5P**, cis-Cyclooctene homopolymer
28702-45-6P, Cyclooctene homopolymer, SRU 491572-22-6P 637041-51-1P
637041-52-2P
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**
(microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 110-17-8, Fumaric acid, reactions 542-92-7, Cyclopentadiene, reactions
2043-47-2 7719-09-7, Thionyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(monomer synthesis; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 1200-88-0P, endo,exo-Bicyclo[2.2.1]hept-5-ene-2,3-dicarboxylic acid
4582-21-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer synthesis; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 637041-50-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(monomer; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT 126949-65-3 139220-25-0, 2,6-Diisopropylphenylimido neophylidenemolybdenum(VI)bis(hexafluoro-tert.-butoxide)
RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator, ring-opening; microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
IT **28603-38-5P**, cis-Cyclooctene homopolymer
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**
(microphase-separated diblock copolymers carrying semi fluorinated side groups prepared by ROMP)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



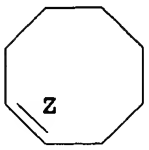
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:813937 HCAPLUS
DN 140:375493
TI New synthetic method for cyclic polyethylene
AU Uozumi, Toshiya
CS Inst. Environ. Manage. Technol., Natl. Inst. Adv. Ind. Sci. Technol., Japan
SO Shokubai (2003), 45(7), 615
CODEN: SHKUAJ; ISSN: 0559-8958
PB Shokubai Gakkai
DT Journal; General Review
LA Japanese
AB A review on synthesis of cyclic polyethylene by metathetic ring-opening polymerization of cis-cyclooctene using a cyclic Ru complex catalyst.
CC 35-0 (Chemistry of Synthetic High Polymers)
ST review cyclic polyethylene manuf cyclooctene polymn; metathetic ring opening polymn cyclooctene review; ruthenium complex catalyst cyclooctene polymn review
IT Polymerization catalysts
(metathetic, ring-opening, Ru complex; synthetic method for cyclic polyethylene)
IT Polymerization
(metathetic, ring-opening; synthetic method for cyclic polyethylene)
IT 578706-82-8
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; synthetic method for cyclic polyethylene)
IT **28603-38-5DP**, cis-Cyclooctene homopolymer, hydrogenated
RL: IMF (Industrial manufacture); PRP (Properties); **PREP (Preparation)**
(synthetic method for cyclic polyethylene)
IT **28603-38-5DP**, cis-Cyclooctene homopolymer, hydrogenated
RL: IMF (Industrial manufacture); PRP (Properties); **PREP (Preparation)**
(synthetic method for cyclic polyethylene)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.

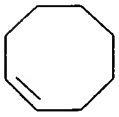


L16 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:523678 HCAPLUS
DN 139:91048
TI Olefin metathesis catalyst containing ruthenium
IN Suzuki, Shigeaki; Ishino, Hiroshige
PA Kuraray Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003190807	A2	20030708	JP 2001-393238	20011226
PRAI	JP 2001-393238		20011226		

AB The invention refers to a metathesis catalyst containing ruthenium for ring-opening and ring-closing of olefins, wherein the catalyst contains ruthenium and a salt having a Sc, Y or La cation and a nitrate, sulfate, organic sulfonate, fluoro organic sulfonate or perchlorate anion.

IC ICM B01J031-24
ICS B01J031-26; C07B061-00; C07C029-00; C07C029-32; C07C033-035; C07C035-08; C08G061-00
CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 37
ST olefin ring opening closing metathesis catalyst transition metal salt; ruthenium olefin ring opening closing metathesis catalyst
IT Metathesis catalysts
(olefin; olefin metathesis catalyst containing ruthenium)
IT 10099-59-9, Lanthanum nitrate 10099-60-2, Lanthanum(3+) sulfate 10361-83-8, Samarium nitrate 13465-60-6, Scandium nitrate 52093-26-2 54761-04-5 144026-79-9, Scandium trifluoromethane sulfonate 338946-18-2
RL: CAT (Catalyst use); DEV (Device component use); USES (Uses)
(olefin metathesis catalyst containing ruthenium)
IT **931-88-4**, Cyclooctene 13175-44-5, 7-Octen-1-ol 25267-51-0, **Polycyclooctene** 30385-19-4, 3-Hydroxy-1,7-octadiene
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(olefin metathesis catalyst containing ruthenium)
IT 220015-79-2P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(olefin metathesis catalyst containing ruthenium)
IT **931-88-4**, Cyclooctene
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(olefin metathesis catalyst containing ruthenium)
RN 931-88-4 HCAPLUS
CN Cyclooctene (8CI, 9CI) (CA INDEX NAME)



L16 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:898272 HCAPLUS
DN 138:107493
TI Chemically Cross-Linked Polycyclooctene: Synthesis, Characterization, and Shape Memory Behavior
AU Liu, Changdeng; Chun, Seung B.; Mather, Patrick T.; Zheng, Lei; Haley, Elisabeth H.; Coughlin, E. Bryan
CS Polymer Program, Institute of Materials Science, University of Connecticut, Storrs, CT, 06268, USA
SO Macromolecules (2002), 35(27), 9868-9874
CODEN: MAMOBX; ISSN: 0024-9297
PB American Chemical Society
DT Journal
LA English
AB A novel polymeric shape memory system of chemical cross-linked polycyclooctene (PCO) was developed and characterized. PCO was synthesized via ring-opening metathesis polymerization of cyclooctene using the dihydroimidazolylidene-modified Grubb's catalyst. After dicumyl **peroxide** was added to PCO, the mixture was compression-molded into a film and further cured through chemical crosslinking upon heating. The chemical cross-linked PCO samples were fully characterized using differential scanning calorimetry (DSC), dynamic mech. anal. (DMA), and wide-angle X-ray scattering (WAXS) in order to gain insight into the rapid shape memory behavior. We observe that the transition temperature of PCO is tunable through the change of the trans/cis ratio of vinylene groups. A fast shape memory behavior was observed, where the primary stress-free shape was recovered within 1 s on immersion in hot water above the m.p. of the crystalline PCO phase. In contrast with glassy shape memory polymers, chemical cross-linked PCO behaves as an elastomer capable of arbitrary shaping above the sharp melting temperature of the PCO crystalline phase and subsequent shape fixing during crystallization
CC 37-5 (Plastics Manufacture and Processing)
Section cross-reference(s): 39
ST cyclooctene polymn **peroxide** crosslinking morphol transition temp shape memory
IT Polymer chains
(conformation, trans-cis isomerization; synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)
IT Polymer morphology
(crystalline; synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)
IT Synthetic rubber, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(cyclooctene; synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)
IT Crystallization temperature
Fusion enthalpy

Melting point
Shape memory effect
Storage modulus
(synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)

IT 80-43-3, Dicumyl **peroxide**
RL: CAT (Catalyst use); USES (Uses)
(crosslinking catalyst; synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)

IT 172222-30-9, Grubb's catalyst 246047-72-3
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)

IT **28603-38-5P**, cis-Cyclooctene homopolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)
(synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)

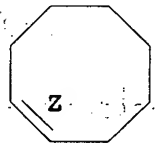
IT **28603-38-5P**, cis-Cyclooctene homopolymer
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); **PREP (Preparation)**; PROC (Process)
(synthesis, characterization, and shape memory behavior of **peroxide**-crosslinked poly(cis-cyclooctene) prepared by ring-opening polymerization)

RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



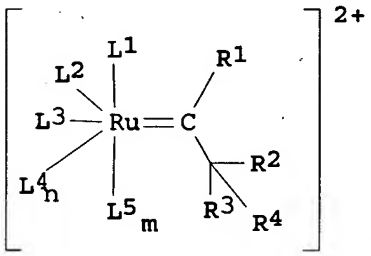
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:240789 HCAPLUS
DN 136:275709
TI Dicationic ruthenium carbene complexes, their preparation and use as catalysts for olefin metathesis reactions
IN Stueer, Wolfram; Roeper, Michael; Jung, Stefan; Wolf, Justin; Werner, Helmut
PA Basf Aktiengesellschaft, Germany
SO PCT Int. Appl., 22 pp.
CODEN: PIXXD2

DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002024713	A1	20020328	WO 2001-EP10778	20010918
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002021605	A5	20020402	AU 2002-21605	20010918
PRAI	DE 2000-10046540	A	20000919		
	WO 2001-EP10778	W	20010918		

OS MARPAT 136:275709
GI



I

AB Dicationic Ru carbene complexes I [R1, R2, R3, R4 = H, C1-20 alkyl, C1-20 haloalkyl, or an aryl or C7-20 aralkyl optionally substituted one to five times by C1-8 alkyl, halo and/or cyano, preferably H, Me or Ph; X, Y = weakly coordinating or noncoordinating anionic radicals, preferably BF4 or B[C6H3(CF3)2-3,5]4; L1, L2, L3, L4, L5 = neutral 2-electron donor ligands or at least two chelate ligands linked together by a bridge, preferably, L1, L2 = PCy3, P(CHMe2)3 and L3, L4 = MeCN, Cy = cyclohexyl; m, n = 0, 1, preferably m = 0, n = 1], useful as catalysts for olefin metathesis reactions, are claimed. I are prepared by several routes, e.g., by treating cationic vinyl complexes [Ru(R1C:CR2R3)L1L2L3L4]X (same R1-3, L1-4, X) with an acid HY (same Y) or with an alkylating agent R4Y (same R4, Y) at temps. from -100 to +200° and at pressures from 0.1-20 bar. In an example, treating 0.39 mmol [RuHCl(:C:CH2)(PCy3)2] in 15 mL CH2Cl2 and 15 mL MeCN with 1.36 mmol KPF6 gave 87% [Ru(CH:CH2)(MeCN)2(PCy3)2]PF6, which subsequently was used as a ROMP catalyst for cyclooctene and as a metathesis catalyst for 1-octene.

IC ICM C07F015-00
ICS B01J031-22
CC 9-13 (Biochemical Methods)
Section cross-reference(s): 35
ST ruthenium carbene complex dicationic prepn olefin metathesis catalyst
IT Alkenes, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dicationic ruthenium carbene complexes as catalysts for olefin

metathesis)
IT Metathesis catalysts
(dicationic ruthenium carbene complexes as, for olefins)
IT Polymerization catalysts
(metathetic, ring-opening; dicationic ruthenium carbene complexes as catalysts for)
IT 203192-08-9 209330-49-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(complexation with acetonitrile)
IT 75-05-8, Acetonitrile, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(complexation with ruthenium compds.)
IT 111-66-0, 1-Octene
RL: RCT (Reactant); RACT (Reactant or reagent)
(metathesis reaction of, in presence of cationic vinyl ruthenium complex)
IT 405877-58-9P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(mixed hexafluorophosphate and tetrafluoroborate salts)
IT 349148-94-3P
RL: CAT (Catalyst use); SPN (Synthetic preparation); **PREP (Preparation)**; USES (Uses)
(preparation and catalyst for olefin metathesis reactions)
IT 25267-51-0P, **Polycyclooctene** 349148-95-4P 349148-97-6P 349148-98-7P 349148-99-8P 349149-02-6P 405877-54-5P 405877-55-6P 405877-56-7P 405877-57-8P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)
IT 143-66-8, Sodium tetraphenylborate 17084-13-8, Potassium hexafluorophosphate 79060-88-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with ruthenium carbene or vinyl complexes)
IT 139362-04-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with ruthenium vinyl complex)
IT 16872-11-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction with ruthenium vinyl complexes)
IT **931-88-4**, Cyclooctene
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(ring-opening metathesis polymerization of, in presence of cationic vinyl ruthenium complex)
IT **931-88-4**, Cyclooctene
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(ring-opening metathesis polymerization of, in presence of cationic vinyl ruthenium complex)
RN 931-88-4 HCAPLUS
CN Cyclooctene (8CI, 9CI) (CA INDEX NAME)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN

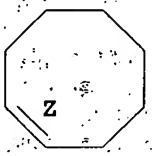
AN 2001:662087 HCAPLUS
DN 136:6452
TI Controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems
AU Dragutan, V.; Dragutan, I.; Dimonie, M.
CS Institute of Organic Chemistry, Bucharest, 71141, Rom.
SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (2001), 42(2), 362-363
CODEN: ACPPAY; ISSN: 0032-3934
PB American Chemical Society, Division of Polymer Chemistry
DT Journal; (computer optical disk)
LA English
AB Stereoselectivity in cycloolefin polymerization with tungsten-based ROMP catalysts is strongly influenced by the organometallic cocatalyst, the nature of the donor-acceptor ligands associated with the transition metal, the structure of the monomer, as well as by reaction temperature, conversion and molar ratios. By monitoring these factors, the polyalkenamer stereoconfiguration could be easily controlled in order to tailor the physicochem. properties of the products. The reaction pathway was rationalized in terms of the metallacarbene-metallacyclobutane mechanism evidencing the role played by the cocatalyst and the third component of the catalytic system.
CC 35-7 (Chemistry of Synthetic High Polymers)
ST stereoselectivity ROMP cyclic olefin tungsten catalyst
IT Polyalkenamers
RL: CAT (Catalyst use); USES (Uses)
(controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems)
IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(iso-Bu, catalysts; controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems containing)
IT Polymerization catalysts
(metathetic, ring-opening; controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems)
IT 13283-01-7, Tungsten hexachloride
RL: CAT (Catalyst use); USES (Uses)
(catalysts; controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems)
IT 90-02-8, Salicyl aldehyde, uses 96-10-6, Chlorodiethylaluminum, uses 97-93-8, Triethylaluminum, uses 100-99-2, Triisobutylaluminum, uses 106-89-8, Epichlorohydrin, uses 108-31-6, Maleic anhydride, uses 108-77-0, Cyanuric chloride 108-80-5, Cyanuric acid 118-75-2, Chloranil, uses 494-72-4 1113-12-8, Diallyldimethylsilane
RL: CAT (Catalyst use); USES (Uses)
(catalysts; controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems containing)
IT 25038-44-2P, Polybutenamer 26353-15-1P, 1,5-Cyclooctadiene homopolymer 26353-17-3P 27636-12-0P **28603-38-5P**, cis-Cyclooctene homopolymer 28730-09-8P, trans-Polyoctenamer 28730-11-2P, trans-Polydodecenamer 28854-13-9P, trans-Cyclooctene homopolymer 29300-20-7P, trans-Polypentenamer 38439-19-9P, cis-Polypentenamer 52236-40-5P, cis-Polyoctenamer 372937-76-3P, Poly[(1Z)-1-dodecene-1,12-diyl]
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems)
IT 28730-07-6P, trans-Polypentenamer 40022-13-7P, cis-Polypentenamer, sru
RL: SPN (Synthetic preparation); PREP (Preparation)
(controlling stereoselectivity in ROMP of monocyclic olefins catalyzed

by tungsten-based systems containing)
IT **28603-38-5P**, cis-Cyclooctene homopolymer
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(controlling stereoselectivity in ROMP of monocyclic olefins catalyzed by tungsten-based systems)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.

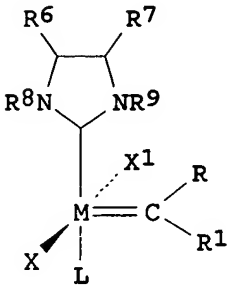
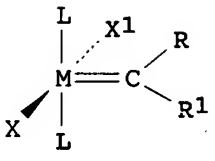
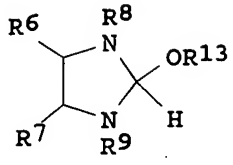


RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:842145 HCAPLUS
DN 134:29790
TI Imidazolidine-based metal carbene metathesis catalysts
IN Grubbs, Robert H.; Scholl, Matthias
PA California Institute of Technology, USA
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000071554	A2	20001130	WO 2000-US14048	20000522
	WO 2000071554	A3	20010705		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2372746	AA	20001130	CA 2000-2372746	20000522
	EP 1180108	A2	20020220	EP 2000-937665	20000522
	EP 1180108	B1	20030827		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO				
	BR 2000010389	A	20020319	BR 2000-10389	20000522
	JP 2003500412	T2	20030107	JP 2000-619810	20000522
	AT 248182	E	20030915	AT 2000-937665	20000522
	ES 2206248	T3	20040516	ES 2000-937665	20000522
	AU 777357	B2	20041014	AU 2000-52807	20000522
PRAI	US 1999-135493P	P	19990524		

US 1999-142853P P 19990707
WO 2000-US14048 W 20000522
OS MARPAT 134:29790
GI


I

II

III

AB Metathesis catalysts with an imidazolidine-based ligand have general structure I (M = Ru, Os; X, X1 = anionic ligand; L = neutral electron donor ligand; R, R1, R6-9 = H, C1-20 alkyl, C2-20 alkenyl, C2-20 alkynyl, aryl, C1-20 carboxylate, C1-20 alkoxy, C2-20 alkenyloxy, C2-20 alkynyloxy, aryloxy, C2-20 alkoxycarbonyl, C1-20 alkylthiol, arylthiol, C1-20 alkylsulfonyl, C1-20 alkylsulfinyl) and are prepared by contacting complex II with imidazolidine compound III (R13 = C1-20 alkyl, aryl). The inclusion of an imidazolidine ligand to the previously described ruthenium or osmium catalysts has been found to dramatically improve the properties of these complexes. The inventive catalysts maintains the functional group tolerance of previously described ruthenium complexes while having enhanced metathesis activity that compares favorably to prior art tungsten and molybdenum systems.

IC ICM C07F015-00
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 29
ST metathesis catalyst ruthenium osmium imidazolidine ligand
IT Metathesis catalysts
(imidazolidine-based metal carbene metathesis catalysts)
IT Metathesis
(metathesis reaction using imidazolidine-based metal carbene catalysts)
IT Polymerization
Polymerization catalysts
(metathetic; metathesis reaction using imidazolidine-based metal carbene catalysts)
IT 310397-72-9P
RL: IMF (Industrial manufacture); PREP (Preparation)
(dichloro-telechelic polybutadiene; metathesis reaction using imidazolidine-based metal carbene catalysts)
IT 246047-72-3P 246047-73-4P 246047-74-5P 253688-91-4P 310397-70-7P
310397-71-8P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(imidazolidine-based metal carbene metathesis catalysts)
IT 245679-22-5 245679-26-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(imidazolidine-based metal carbene metathesis catalysts)
IT 21622-00-4P, Cyclopent-3-ene-1,1-dicarboxylic acid diethyl ester
25038-78-2P, Dicyclopentadiene homopolymer 25103-85-9P, Cyclopentene

homopolymer 26353-15-1P, cis,cis-Cycloocta-1,5-diene homopolymer **28603-38-5P**, cis-Cyclooctene homopolymer 68865-44-1P 69596-51-6P 165549-24-6P 165549-26-8P 215167-65-0P 304022-56-8DP, 1,5-Dimethyl-1,5-cyclooctadiene homopolymer, hydrogenated 304022-56-8P, 1,5-Dimethyl-1,5-cyclooctadiene homopolymer 310397-73-0P 310397-74-1P 310397-75-2P 310397-76-3P
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(metathesis reaction using imidazolidine-based metal carbene catalysts)

IT 80-62-6, Methyl methacrylate 3195-24-2, Diethyl diallylmalonate 5048-26-0, 5-Hexenyl acetate 18516-37-5, 2-Methyl-1-undecene 25260-60-0 94108-33-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(metathesis reaction using imidazolidine-based metal carbene catalysts)

IT 56222-36-7P 134030-21-0P 245679-18-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(preparation of imidazolidine-based metal carbene metathesis catalysts)

IT 88-05-1, Mesitylamine 107-22-2, Glyoxal 122-51-0, Triethyl orthoformate 172222-30-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of imidazolidine-based metal carbene metathesis catalysts)

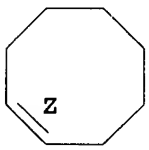
IT **28603-38-5P**, cis-Cyclooctene homopolymer
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(metathesis reaction using imidazolidine-based metal carbene catalysts)

RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



L16 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:602557 HCAPLUS
DN 133:363002
TI Studies in switching the mechanism of polymerization by single-site catalysts - from vinyl addition to metathesis
AU Manivannan, R.; Sundararajan, G.; Kaminsky, W.
CS Department of Chemistry, Indian Institute of Technology, Madras, 600 036, India
SO Journal of Molecular Catalysis A: Chemical (2000), 160(1), 85-95
CODEN: JMCCF2; ISSN: 1381-1169
PB Elsevier Science B.V.
DT Journal
LA English
AB Titanium/MAO (methylaluminoxane)-based catalyst systems were used to synthesize polycyclic olefins containing both vinyl and ring-opened units by converting the mechanism of polymerization from vinyl addition (VA) to metathesis. The switch in mechanism was achieved by adding a reactivity transfer reagent like phenylacetylene (PA) during the course of VA polymerization The

polymers synthesized contained nearly 30% ring-opened structures as indicated by their 1H NMR. Kinetic studies indicated a change in mechanism of polymerization after the addition of the reactivity transfer reagent. Arrhenius parameters calculated for both VA and metathesis polymerization also suggested mechanism switching in the course of polymerization

CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 78

ST titanium methylaluminoxane catalyst ring opening metathesis polymn; vinyl addn ring opening metathesis polymn mechanism

IT Aluminoxanes
RL: CAT (Catalyst use); USES (Uses)
(Me; studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

IT Polymerization
Polymerization catalysts
Polymerization kinetics
(metathetic, ring-opening; studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

IT 536-74-3
RL: CAT (Catalyst use); USES (Uses)
(initiator; studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

IT 135072-61-6 307354-97-8
RL: CAT (Catalyst use); USES (Uses)
(studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

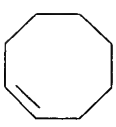
IT 142-29-0, Cyclopentene 498-66-8, Bicyclo[2.2.1]hept-2-ene **931-88-4**, Cyclooctene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); **RACT (Reactant or reagent)**
(studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

IT 25038-76-0, Polynorbornene 25103-85-9, Poly-cyclopentene 25267-51-0, **Polycyclooctene** 42813-64-9, Polynorbornene, sru
RL: PRP (Properties)
(studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

IT 32759-57-2P, Cyclopentene-norbornene copolymer 52255-50-2P, Cyclooctene-norbornene copolymer
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

IT **931-88-4**, Cyclooctene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); **RACT (Reactant or reagent)**
(studies in switching mechanism of polymerization from vinyl addition to metathesis by single-site catalysts)

RN 931-88-4 HCAPLUS
CN Cyclooctene (8CI, 9CI) (CA INDEX NAME)



RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1997:72322 HCAPLUS
DN 126:104470
TI Multiple bonds between main-group elements and transition metals. 159. A molecularly defined, grafted olefin metathesis catalyst from tris(neopentyl)nitridomolybdenum(VI)
AU Herrmann, Wolfgang A.; Stumpt, Andreas W.; Priermeier, Thomas; Bogdanovic, Sandra; Dufaud, Veronique; Basset, Jean-Marie
CS Anorganisch-chemisches Inst., Technischen Univ. Muenchen, Garching, D-85747, Germany
SO Angewandte Chemie, International Edition in English (1997), Volume Date 1996, 35(23/24), 2803-2805
CODEN: ACIEAY; ISSN: 0570-0833
PB VCH
DT Journal
LA English
AB The catalytic activity of tris(neopentyl)nitridomolybdenum(VI) (I) immobilized on silica in olefin metathesis and ring-opening metathesis polymerization was compared with that of I. The surface grafting of I on partially dehydroxylated silica surfaces resulted in a strong enhancement of the catalytic activity. At ambient temps. norbornene yielded the ROMP polymer at an olefin/Mo ratio of 300 with turnover frequencies beyond 3000 h-1. In contrast I was completely inactive under these and related reaction conditions.
CC 35-3 (Chemistry of Synthetic High Polymers)
ST molybdenum complex catalyst activity olefin polymn; metathesis polymn olefin molybdenum complex catalyst; ring opening polymn olefin molybdenum complex
IT Polymerization
(metathetic, ring-opening; catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)
IT Polymerization
(metathetic; catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)
IT 25038-76-0P, Norbornene homopolymer **28603-38-5P**, cis-Cyclooctene homopolymer 185905-95-7P, trans-2-Pentene homopolymer
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)
IT 1104-93-4, 1,1,3,3-Tetraphenyldisiloxane-1,3-diol
RL: RCT (Reactant); RACT (Reactant or reagent)
(in study of catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)
IT 185905-97-9P 185905-99-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(in study of catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)
IT 791-31-1, Triphenylsilanol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant; in study of catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)
IT 156525-24-5, Tris(neopentyl)nitridomolybdenum(VI)
RL: CAT (Catalyst use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(silica-immobilized; catalytic activity of silica-immobilized

tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)

IT 7631-86-9, Silica, uses
RL: CAT (Catalyst use); USES (Uses)
(tris(neopentyl)nitridomolybdenum(VI) immobilized on; catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)

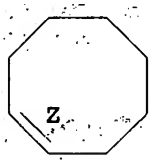
IT **28603-38-5P**, cis-Cyclooctene homopolymer
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(catalytic activity of silica-immobilized tris(neopentyl)nitridomolybdenum(VI) in olefin metathesis and ring-opening metathesis polymerization)

RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

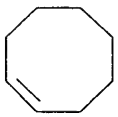
Double bond geometry as shown.



RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1993:39544 HCAPLUS
DN 118:39544
TI Ruthenium-catalyzed ring-opening metathesis polymerization of cycloolefins initiated by diazoesters
AU Demonceau, Albert; Noels, Alfred F.; Saive, Eric; Hubert, Andre J.
CS Lab. Macromol. Chem. Org. Catal., Univ. Liege, Liege, B-4000, Belg.
SO Journal of Molecular Catalysis (1992), 76(1-3), 123-32
CODEN: JMCADS; ISSN: 0304-5102
DT Journal
LA English
AB Addition of catalytic amts. of diazoesters to various Ru complexes, including some diruthenium(II,II) tetrakis carboxylates, led to new catalyst systems that promoted the ring-opening polymerization of norbornene, cyclooctene, or cyclopentene. The conversion and the cis content of the polymers varied widely and depended on the nature of the catalyst precursor.
CC 35-7 (Chemistry of Synthetic High Polymers)
ST diazoester ruthenium catalyst metathesis polymn; ring opening polymn ruthenium complex; carboxylate ruthenium complex polymn complex
IT Polymerization
(metathetic, ring-opening, of cycloolefins, mechanism of)
IT Polymerization catalysts
(metathetic, ring-opening, ruthenium complexes with diazoesters, for cycloolefins)
IT 37366-09-9 52462-29-0 52490-94-5 61604-32-8 112681-79-5 145381-22-2 145381-23-3
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing diazoesters, for ring-opening metathesis polymerization of cycloolefins)

IT 623-73-4, Ethyl diazoacetate 6832-16-2, Methyl diazoacetate
35059-50-8, tert-Butyl diazoacetate
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing ruthenium complexes, for ring-opening metathesis polymerization of cycloolefins)
IT 142-29-0, Cyclopentene 498-66-8, Norbornene **931-88-4**, Cyclooctene
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(polymerization of, ring-opening metathesis, mechanism of, in presence of ruthenium complex and diazoester catalysts)
IT 25038-76-0P, Polynorbornene 25103-85-9P, Polycyclopentene 25267-51-0P, **Polycyclooctene**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, via ring-opening metathesis polymerization, in presence of ruthenium complex-diazoester catalysts, microstructure and mol. weight in relation to)
IT **931-88-4**, Cyclooctene
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(polymerization of, ring-opening metathesis, mechanism of, in presence of ruthenium complex and diazoester catalysts)
RN 931-88-4 HCAPLUS
CN Cyclooctene (8CI, 9CI) (CA INDEX NAME)



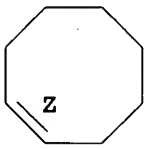
L16 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1983:469792 HCAPLUS
DN 99:69792
TI Stereochemical behavior of cis- and trans-cyclooctene in metathesis
AU Larroche, C.; Laval, J. P.; Lattes, A.; Leconte, M.; Quignard, F.; Basset, J. M.
CS Univ. Paul Sabatier, Toulouse, 31077, Fr.
SO Journal of the Chemical Society, Chemical Communications (1983), (5), 220-1
CODEN: JCCCAT; ISSN: 0022-4936
DT Journal
LA English
AB Metathesis of cis- and trans-cyclooctene in the presence of Mo(NO)2Cl2(PPh3)2 and EtAlCl2 catalysts gave predominantly cis- and trans-polyoctenes, resp. Cyclic and acyclic olefins show similar stereochem. behavior in metathesis, but the expected retention of configuration may be attenuated, depending on ring strain.
CC 22-3 (Physical Organic Chemistry)
Section cross-reference(s): 35
ST alkene metathesis stereochem; cycloalkene metathesis stereochem; stereochem metathesis polymn cyclooctene; molybdenum complex catalyst metathesis cyclooctene
IT Polymerization catalysts
(dinitrosylmolybdenum complex-ethylaluminum dichloride, for cyclooctenes metathesis)
IT Alkenes, reactions
Cycloalkenes
RL: RCT (Reactant); RACT (Reactant or reagent)
(metathesis of, stereoselectivity of molybdenum complex-ethylaluminum

dichloride-catalyzed)
IT Double decomposition catalysts
(metathesis, dinitrosylmolybdenum complex-ethylaluminum dichloride, for cyclooctenes)
IT Double decomposition
(metathesis, of cyclooctenes, stereoselectivity of)
IT Stereochemistry
(of metathesis of alkenes in presence of molybdenum complex and ethylaluminum dichloride)
IT Polymerization
(metathetic, of cyclooctenes, stereoselectivity of)
IT 14730-11-1
RL: CAT (Catalyst use); USES (Uses)
(catalysts, with ethylaluminum dichloride, for metathesis of alkenes)
IT 563-43-9, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, with molybdenum complex, for metathesis of alkenes)
IT 498-66-8 627-20-3 646-04-8 931-87-3 931-89-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(metathesis of, stereoselectivity of molybdenum complex-ethylaluminum dichloride-catalyzed)
IT **28603-38-5P** 28854-13-9P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, by stereospecific metathesis of cyclooctene)
IT **28603-38-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, by stereospecific metathesis of cyclooctene)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



L16 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1977:585294 HCAPLUS
DN 87:185294
TI Polymerization for cycloolefins
IN Kuepper, Friedrich Wilhelm
PA Chemische Werke Huels A.-G., Fed. Rep. Ger.
SO Ger. Offen., 23 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 2613999	A1	19771006	DE 1976-2613999	19760401
DE 2613999	C3	19790719		

	DE 2613999	B2	19781123		
	US 4095033	A	19780613	US 1977-777798	19770315
	FR 2346378	A1	19771028	FR 1977-8850	19770324
	BE 853056	A1	19770930	BE 1977-176270	19770330
	NL 7703522	A	19771004	NL 1977-3522	19770331
	JP 52121100	A2	19771012	JP 1977-35512	19770331
	CA 1079442	A1	19800610	CA 1977-275272	19770331
	GB 1572270	A	19800730	GB 1977-13564	19770331
PRAI	DE 1976-2613999	A	19760401		

AB WCl6 and cis,trans-1,5-cyclodecadiene (I) [1124-78-3] were used to catalyze the polymerization of cis,cis-1,5-cyclooctadiene (II), cis-cyclooctene, cyclododecene, and cis,trans,trans-1,5,9-cyclododecatriene. Thus, 1.5 mL 0.1 M solution of WCl6 in benzene was added to 30 mL II containing 0.25 mL I at 0°, and the mixture was heated to 20° and polymerized for 6 min to prepare 9.9 g polymer [28603-39-6] with reduced sp. viscosity 1.2 dl/g (135°, Decalin).

IC C08F032-02

CC 35-4 (Synthetic High Polymers)

ST tungsten catalyst polymn cycloalkene; cyclodecadiene polymn catalyst; cyclooctadiene polymn catalytic; cyclododecatriene polymn catalytic

IT Polyalkenamers
RL: IMF (Industrial manufacture); PREP (Preparation)
(manufacture of, catalysts for)

IT Polymerization catalysts
(tungsten hexachloride-cyclodecadiene, for cycloolefins)

IT 7783-82-6
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing cyclodecadiene, for polymerization of cycloalkenes)

IT 1124-78-3
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing tungsten hexachloride, for polymerization of cycloalkene)

IT 706-31-0P 26353-15-1P 27056-69-5P **28603-38-5P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for)

IT **28603-38-5P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for)

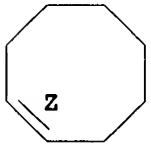
RN 28603-38-5 HCAPLUS

CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



L16 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1977:453647 HCAPLUS

DN 87:53647

TI Polymerization of 5-substituted cyclooctenes with tungsten and molybdenum catalysts

AU Sato, Hisaya; Okimoto, Kazuaki; Tanaka, Yasuyuki
CS Fac. Technol., Tokyo Univ. Agric. Technol., Tokyo, Japan
SO Journal of Macromolecular Science, Chemistry (1977), A11(4), 767-78
CODEN: JMCHBD; ISSN: 0022-233X
DT Journal
LA English
AB Cyclooctene (I) [**931-88-4**] and 5-methylcyclooctene (II) [13152-07-3] provided high polymers in 80% yield with the use of WCl6 [13283-01-7]-Et3Al2Cl3 or WCl6/EtAlCl2 catalyst. 5-Chlorocyclooctene [1855-55-6] gave oligomer [63220-31-5] in 50% yield with WCl6/Et2AlCl catalyst. Neither polymer nor oligomer was produced from 5-methoxycyclooctene [32160-45-5]. The polymers obtained were produced via a ring-opening mechanism. The ratio of cis to trans structure in I polymer and in II polymer was determined by 1H NMR. I polymer containing >50% trans structure was a crystalline solid at room temperature, while the polymer containing 30% trans structure did not crystallize at room temperature. II polymer was amorphous, regardless of the content of trans structure. I polymer and II polymer obtained with MoCl5 [10241-05-1]/Et2AlCl or MoCl5/EtAlCl2 catalyst contained no C-C double bonds, and a vinyl polymerization mechanism was expected for this system.
CC 35-4 (Synthetic High Polymers)
Section cross-reference(s): 24
ST cyclooctene deriv polymn mechanism; **polycyclooctene** manuf catalyst; tungsten polymn catalyst cyclooctene; molybdenum polymn catalyst cyclooctene; ring cleavage cyclooctene polymn
IT Polymerization catalysts
(aluminum compds. and molybdenum chlorides or tungsten chlorides, for cyclooctene derivs.)
IT Chains, chemical
(cis-trans ratio in, polymer morphol. in relation to, in cyclooctene derivative polymers)
IT Ring cleavage
(in polymerization of cyclooctene derivs., mechanism of)
IT Polymer morphology
(of cyclooctene derivative polymers, cis-trans ratio effect on)
IT Polymerization
(of cyclooctene derivs., mechanism of)
IT 32160-45-5
RL: PROC (Process)
(attempted polymerization of, by molybdenum or tungsten catalysts)
IT 10241-05-1 13283-01-7
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing aluminum compds., for ring-opening polymerization of cyclooctene derivs.)
IT 96-10-6, uses and miscellaneous 97-93-8, uses and miscellaneous 12075-68-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing molybdenum or tungsten compds., for ring-opening polymerization of cyclooctene derivs.)
IT **931-88-4** 1855-55-6 13152-07-3
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(polymerization of, mechanism of catalytic)
IT 25267-51-0P 63220-31-5P 63264-14-2P
RL: PRP (Properties); SPN (Synthetic preparation); **PREP (Preparation)**
(preparation and properties of)
IT 3868-64-2P
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of)

IT 7647-01-0, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with cyclooctadiene)
IT 111-78-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with hydrogen chloride)
IT **931-88-4**
RL: RCT (Reactant); **RACT (Reactant or reagent)**
(polymerization of, mechanism of catalytic)
RN 931-88-4 HCAPLUS
CN Cyclooctene (8CI, 9CI) (CA INDEX NAME)

L16 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1976:151452 HCAPLUS
DN 84:151452
TI Method for preparing polyalkenamers
IN Babitskii, B. D.; Denisova, T. T.; Kormer, V. A.; Lapuk, I. M.; Lobach, M. I.; Simanova, N. P.; Solov'ev, K. S.; Chepurnaya, T. Ya.; Yufa, T. L.
PA USSR
SO U.S., 6 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3933777	A	19760120	US 1974-450226	19740311
	SU 505658	T	19760305	SU 1973-1891808	19730309
	SU 514850	T	19760525	SU 1973-1891810	19730309
	SU 515761	T	19760530	SU 1973-1891809	19730309
	SU 513987	T	19760515	SU 1973-1891812	19731109
PRAI	SU 1973-1891808	A	19730309		
	SU 1973-1891809	A	19730309		
	SU 1973-1891810	A	19730309		
	SU 1973-1891812	A	19730309		

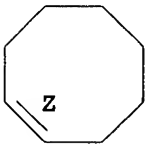
AB Polyalkenamers, useful in the synthetic rubber industry, are manufactured by ring opening in polymerization of alicyclic unsatd. compds. in the presence of catalysts containing group IV-VIII transition metal compds., group I-IV metal compds., and quinone derivs. Thus, polypentenamer [28702-43-4], having intrinsic viscosity 3.5 dl/g (benzene, 25°), was prepared in 65% yield by solution polymerization of cyclopentene at 0° for 2 hr using a catalyst containing WCl6 [13283-01-7], dichloroethylaluminum [563-43-9], and p-benzoquinone [106-51-4].
IC C08F
INCL 260093100
CC 36-3 (Plastics Manufacture and Processing)
ST transition metal polymn catalyst; quinone polymn catalyst cycloalkene; organometallic polymn catalyst cycloalkene; polyalkenamer manuf catalyst; ring cleavage polymn cycloalkene
IT 96-10-6, uses and miscellaneous 97-93-8, uses and miscellaneous 98-09-9 98-58-8 106-51-4, uses and miscellaneous 109-72-8, uses and miscellaneous 118-75-2, uses and miscellaneous 130-15-4 527-21-9

557-20-0 563-43-9, uses and miscellaneous 576-59-0 583-63-1
595-90-4 597-64-8 609-60-9 1586-92-1 1633-14-3 1779-25-5
4503-97-3 4972-29-6 7719-09-7 7727-15-3 7783-82-6 7791-25-5
10147-36-1 12077-85-9 12078-25-0 12090-34-5 12170-00-2
13283-01-7 13520-78-0 14285-68-8 16962-00-8 17524-05-9
19247-49-5 24939-24-0 29533-24-2 31635-86-6 32628-95-8
35498-26-1 35828-68-3 50258-55-4 50283-20-0 56376-83-1
56376-84-2 58936-66-6 58945-31-6
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for manufacture of polyalkenamers)
IT 25038-44-2P 25103-85-9P 25267-51-0P 26353-15-1P 26353-16-2P
26710-12-3P **28603-38-5P** 28702-43-4P 28702-45-6P
29793-47-3P 29830-37-3P
RL: PEP (Physical, engineering or chemical process); **PREP (Preparation)**; PROC (Process)
(manufacture of, catalysts for)
IT **28603-38-5P**
RL: PEP (Physical, engineering or chemical process); **PREP (Preparation)**; PROC (Process)
(manufacture of, catalysts for)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



L16 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1975:498186 HCAPLUS
DN 83:98186
TI Cycloalkene polymers
IN Babitskii, B. D.; Denisova, T. T.; Kormer, V. A.; Lapirk, I. M.; Labach, M. I.; Simanova, N. P.; Solov'ev, K. S.; Chepurnaya, T. Ya.; Yufa, T. L.
PA USSR
SO Ger. Offen., 23 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 6

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2411208	A1	19741003	DE 1974-2411208	19740308
	SU 505658	T	19760305	SU 1973-1891808	19730309
	SU 514850	T	19760525	SU 1973-1891810	19730309
	SU 515761	T	19760530	SU 1973-1891809	19730309
	SU 513987	T	19760515	SU 1973-1891812	19731109
PRAI	SU 1973-1891808	A	19730309		
	SU 1973-1891809	A	19730309		
	SU 1973-1891810	A	19730309		

SU 1973-1891812 A 19730309

AB Catalysts with increased activity for the preparation of polyalkenamers from cycloalkenes contain transition metal compds., Group I-VI metal compds., and, as activatiors, quinone derivs., or sulfur acid halides. Thus, stirring 10 g cyclopentene, 0.15 mmole WCl6 [13283-01-7], 0.015 mmole p-benzoquinone [106-51-4], 0.6 mmole EtAlCl2 [563-43-9], and 53 ml PhMe 12 min at 0° gives 65% polypentenamer [28702-43-4], intrinsic viscosity (C6H6, 25°) 3.5 dl/g.

IC C08F

CC 35-4 (Synthetic High Polymers)

ST catalyst polymn cycloalkene; cyclopentene polymn catalyst; benzoquinone polymn catalyst; aluminum alkyl polymn catalyst; tungsten hexachloride polymn catalyst; polyalkenamer catalyst

IT Polymerization catalysts
Ring cleavage catalysts
(metal compds. and activators, for cycloolefins)

IT Rubber, synthetic
(polyalkenamer, manufacture of, catalysts for)

IT Cycloalkenes
RL: RCT (Reactant); RACT (Reactant or reagent)
(polymerization of, catalysts for)

IT 98-09-9 98-58-8 106-51-4, uses and miscellaneous 118-75-2, uses and miscellaneous 130-15-4 527-21-9 7719-09-7 7791-25-5 24939-24-0 29533-24-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing metal compds. for polymerization of cycloolefins)

IT 576-59-0 609-60-9 1633-14-3 4837-38-1 10147-36-1
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing metal compds., for polymerization of cycloolefins)

IT 583-63-1 4972-29-6 26912-70-9
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing metal compds., for ring-opening polymerization of cycloolefins)

IT 96-10-6, uses and miscellaneous 97-93-8, uses and miscellaneous 109-72-8, uses and miscellaneous 557-20-0 563-43-9, uses and miscellaneous 595-90-4 597-64-8 1586-92-1 1779-25-5 7727-15-3 12077-85-9 13869-44-8 50258-55-4
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing transition metal compds., for polymerization of cycloolefins)

IT 4503-97-3 7783-82-6 12090-34-5 12116-37-9 12170-00-2 13283-01-7 13520-78-0 14285-68-8 17524-05-9 18476-80-7 31635-86-6 32628-95-8 35828-68-3 50283-20-0 56376-83-1 56376-84-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for polymerization of cycloolefins)

IT 12078-25-0 16962-00-8
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for ring-opening polymerization of cycloolefins)

IT 25038-44-2P 25103-85-9P 25267-51-0P 26353-16-2P 26710-12-3P **28603-38-5P** 28702-43-4P 28702-45-6P 29793-47-3P 29830-37-3P 41315-84-8P 56384-02-2P
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for)

IT **28603-38-5P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for)

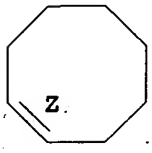
RN 28603-38-5 HCAPLUS

CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



L16 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1973:137091 HCAPLUS
DN 78:137091
TI Polymerization of cycloolefins
IN Matsumura, Shoichi; Hatano, Itaru
PA Kanegafuchi Chemical Industry Co., Ltd.
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 47039388	B4	19721207	JP 1971-28440	19710428
	JP 50015039		19750000	JP	
	US 3954699		19760000	US	

AB Cis,cis-1,5-cyclooctadiene (I) [1552-12-1], cis-cyclooctene [931-87-3], or cyclododecatriene were polymerized in the presence of tungsten trioxide [1314-35-8] and aluminum trichloride [7446-70-0] and (or) ethylaluminum dichloride [563-43-9] or triethylaluminum [97-93-8]. Thus, a mixture of 0.1 mmole WO3 and 0.3 mmole AlCl3 was aged 1 hr at room temperature and mixed with 3 ml I, and the mixture was kept 1 hr at room temperature to give 0.64 g polybutadiene [9003-17-2] with 80% cis-1,4 and 20% trans-1,4 linkages and intrinsic viscosity (30.deg., toluene) 0.16 dl/g.

INCL 26(3)B2; 26(3)A274.21
CC 35-4 (Synthetic High Polymers)
ST cyclooctadiene polymn catalyst; cyclooctene polymn catalyst; cyclododecatriene polymn catalyst; tungsten polymn catalyst; aluminum polymn catalyst
IT Polymerization catalysts
(aluminum compound-tungsten trioxide, for cycloolefins)
IT 1314-35-8
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing aluminum compds., for cycloolefins)
IT 97-93-8, uses and miscellaneous 563-43-9, uses and miscellaneous 7446-70-0, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, containing tungsten trioxide, for cycloolefins)
IT 26353-15-1P **28603-38-5P** 39359-60-9P
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for)
IT **28603-38-5P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

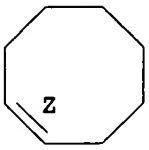
Double bond geometry as shown.

L16 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1969:97263 HCAPLUS
DN 70:97263
TI Metal alkyl-free catalyst for the ring-opening polymerization of cycloolefins
AU Marshall, Philip R.; Ridgewell, Brian J.
CS Res. Develop. Lab., Int. Syn. Rubber Co. Ltd., Southampton, UK
SO European Polymer Journal (1969), 5(1), 29-33
CODEN: EUPJAG; ISSN: 0014-3057
DT Journal
LA English
AB Cycloolefins may be polymerized under very mild conditions to give linear polymers using WCl6-AlBr3 mixture No metal alkyls are involved. The polymers contain no vinylic unsatn.
CC 35 (Synthetic High Polymers)
ST ring opening polymn cycloolefins; polymn cycloolefins ring opening; cycloolefins ring opening polymn; tungsten catalysts polymn cycloolefins; aluminum catalysts polymn cycloolefins; catalysts polymn cycloolefins
IT Polymerization catalysts
(aluminum bromide-tungsten chloride, for cycloolefins)
IT Cycloolefins
RL: SPN (Synthetic preparation); PREP (Preparation)
(polymers, preparation of, metal alkyl-free catalysts for)
IT Polymerization
(ring-opening, of cycloolefins)
IT 23739-22-2
RL: CAT (Catalyst use); USES (Uses)
(catalysts, for polymerization of cycloolefins)
IT 25012-94-6P 25103-85-9P 25568-84-7P 25704-31-8P 26353-15-1P
26353-16-2P 26426-65-3P 27056-69-5P **28603-38-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, metal alkyl-free catalysts for)
IT **28603-38-5P**
RL: SPN (Synthetic preparation); **PREP (Preparation)**
(preparation of, metal alkyl-free catalysts for)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



L16 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1968:40769 HCAPLUS
DN 68:40769
TI Cyclooctene polymerization
IN Ishikawa, Takao; Uehara, Hirosuke; Onishi, Akira
PA Bridgestone Tire Co., Ltd.
SO Jpn. Tokkyo Koho, 3 pp.
CODEN: JAXXAD
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 42022705	B4	19671106	JP	19640812

AB A binary catalyst comprising WCl6 and organic Al compds. is effective for the title polymerization Thus, 2 ml. each of 0.2 M WCl6 and 0.2 M Et3Al in PhMe were mixed in 16 ml. PhMe and stirred at 25° for 1 hr. cis-Cyclooctene (5.2 ml.) was polymerized with the catalyst solution at 25° for 2 hrs. and poured into MeOH-Me2CO-aqueous HCl containing a little 2-phenylaminonaphthalene to give 1.8 g. rubberlike polymer, residual unsatn. 87.5%. The ir spectrum showed a trans C:C absorption. Polymerization at 0-5° for 13 hrs. gave 1.2 g. polymer. Similar polymerization in C7H16 at 25° with 4 ml. 0.2 M Et2AlCl for 1 hr. or with 1 ml. 0.2 M Et3Al for 2 hrs. yielded 2.9 g. or 4.5 g. polymer, resp.
INCL 26C0
CC 38 (Elastomers, Including Natural Rubber)
ST POLYMN CYCLOOCTENE; CYCLOOCTENE POLYMN
IT Rubber, synthetic
((Z)-cyclooctene, manufacture of, catalysts for alkylaluminum-tungsten hexachloride as)
IT Polymerization catalysts
(alkylaluminum-tungsten hexachloride as, for (Z)-cyclooctene)
IT 13283-01-7
RL: CAT (Catalyst use); USES (Uses)
(catalysts from alkylaluminum and, for polymerization of (Z)-Cyclooctene)
IT 96-10-6, uses and miscellaneous 97-93-8, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts from tungsten chloride (WCl6) and, for polymerization of (Z)-cyclooctene)
IT **28603-38-5P**
RL: **PREP (Preparation)**
(rubber, manufacture of, catalysts for, alkylaluminum-tungsten hexachloride as)
IT **28603-38-5P**
RL: **PREP (Preparation)**
(rubber, manufacture of, catalysts for, alkylaluminum-tungsten hexachloride as)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.

L16 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2005 ACS on STN
AN 1967:19005 HCAPLUS
DN 66:19005
TI Catalyst system for the polymerization of cycloalkenes
PA "Montecatini" Societa Generale per l'Industria Mineraria e Chimica
SO Neth. Appl., 22 pp.
CODEN: NAXXAN
DT Patent
LA Dutch
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	NL 6601466		19660812		
	DE 1620972			DE	
	DE 1620973			DE	
	FR 1467720			FR	
	GB 1062367			GB	
	IT 778370			IT	
	US 3449310		19690000	US	
PRAI	IT		19650211		

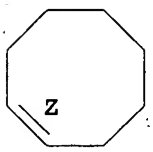
GI For diagram(s), see printed CA Issue.
AB Linear, unsatd. cycloalkene polymers are prepared at a high polymerization velocity by using a catalyst system comprising a mixture of a transition metal salt (I) (WCl6, WOCl4, or MbCl5), an organometallic compound (II) (Et2AlCl, ET3Al, (C6H13)3Al, iso-Bu2AlH, or Et2Be), and a **peroxide** (III), the system being characterized by a I-II ratio of 1:0.5 to 1:100, a I-III ratio of 1:0.5, and a I-monomer ratio of 1:200 to 1:2000. E.g., 10 ml. cyclopentene (IIIa) is cooled under N to -30°, after which 0.188 millimole Bz2O2, 0.188 millimole WCl6, and 0.94 millimole Et2AlCl are subsequently added with stirring. After 1 hr. the polymerization is stopped by the addition of 20 ml. MeOH, and the mixture poured into 100 ml. MeOH containing 5 ml. 38% HCl. The polymer is dissolved in 25 ml. C6H6 containing 20 g. phenyl-β-naphthylamine (IV); the solution is filtered and the filtrate poured into 150 ml. MeOH. The polymer is suspended in MeOH containing 1% by weight IV, and then dried in vacuo to give 3 g. polymer, intrinsic viscosity 4.6 (in PhMe at 30°), and containing 80% trans- and 20% cis-cyclopentenamer units.
IC C08F
CC 35 (Synthetic High Polymers)
ST POLYMN CYCLOALKENES; CYCLOALKENES POLYMN; CYCLOPENTENES POLYMN; CATALYST POLYMN CYCLOALKENES
IT Polymerization catalysts
(aluminum alkyl-**peroxide**-transition metal halide as, for cycloalkene)
IT Cycloolefins
RL: USES (Uses)

(polymers, manufacture of, catalysts for, aluminum alkyl-**peroxide**-transition metal halide as)
IT 10241-05-1 13283-01-7 13520-78-0
RL: CAT (Catalyst use); USES (Uses)
(catalysts from aluminum alkyls, **peroxides** and, for polymerization of cycloalkenes)
IT 64-17-5, uses and miscellaneous 67-56-1, uses and miscellaneous
71-36-3, uses and miscellaneous 75-91-2 79-21-0 80-43-3 94-17-7
94-36-0, uses and miscellaneous 110-05-4 7722-84-1, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts from aluminum alkyls, transition metal halides and, for polymerization of cycloalkenes)
IT 96-10-6, uses and miscellaneous 97-93-8, uses and miscellaneous
542-63-2 1116-73-0 1191-15-7
RL: CAT (Catalyst use); USES (Uses)
(catalysts from **peroxides**, transition metal halides and, for polymerization of cycloalkenes)
IT 25103-85-9P 26426-65-3P 27056-69-5P **28603-38-5P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for, aluminum alkyl-**peroxide**-transition metal halide as)
IT **28603-38-5P**
RL: IMF (Industrial manufacture); **PREP (Preparation)**
(manufacture of, catalysts for, aluminum alkyl-**peroxide**-transition metal halide as)
RN 28603-38-5 HCAPLUS
CN Cyclooctene, (1Z)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 931-87-3
CMF C8 H14

Double bond geometry as shown.



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